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## SHORTER ARTICLES AND CORRESPONDENCE

### AN EIGHTEENTH CENTURY MICROSCOPE<sup>1</sup>

EARLY microscopes are uncommon and our knowledge of the sequence of their forms is in part to be gained by random discoveries. The instrument shown in the figure was obtained recently from the antiquary Meyer in Zürich (who said that it had formed part of the collection of Sir Henry Angst), and it is worthy of comment, both for its early date, and its admirable preservation.

It dates, in all probability, from the early years of the eighteenth century. It resembles in essential regards John Marshall's<sup>2</sup> microscope of about 1700 and Hertel's<sup>3</sup> of 1716. Indeed it may possibly be slightly earlier than the Marshall instrument, for in some regards it is more archaic. Thus it conserves the tripod-shaped support, and lacks the mechanical focusing adjustment. It is, moreover, not an instrument of common class in which such features would be retained at a late date by reason of economy, for its workmanship is throughout precise and elegant. On the other hand, it is furnished with a sub-stage mirror which suggests a transitional form to the Hertel stand. The stage and the supports of the barrel are of brass, as well also as the upper rim of the eyepiece, which is provided with a dust-proof sliding cover, as in early spy-glasses. The barrel and its supporting tube are of carton; the former is covered with green paper which bears rings as guides for focusing, and gilt bands, the latter is decorated with Chinese shagreen. The base of the barrel, the mounting of the objectives and the region of the eyepiece are of ebony. The base of the stand is octagonal, ornamented with moulding and furnished with a drawer for accessories. It is quite similar to the Marshall instrument in this regard, and in the turned supports of the eyepiece and of the objective.

There is but one eyepiece, its lenses measuring 1 inch and  $1\frac{3}{4}$  inches in diameter, and it can not be removed from the stand.

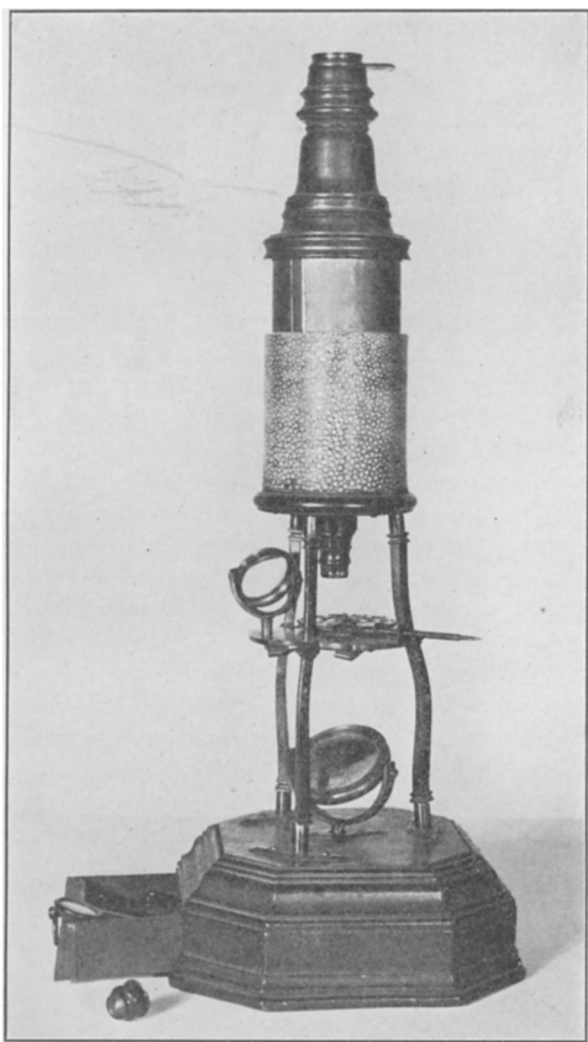
<sup>1</sup> Recently presented to the American Museum of Natural History.

<sup>2</sup> Cf. Harris's "Lexicon Technicum," 1704, and figured by Carpenter (VII. ed.), 1891, p. 136.

<sup>3</sup> *Op. cit.*, pp. 137-138.

There are five objectives, numbered, of which No. 1 is the highest. The power of magnification is as follows:

- Eyepiece and objective 5 = 20 diameters (at 10 inches).
- Eyepiece and objective 4 = 28 diameters (at 10 inches).
- Eyepiece and objective 3 = 50 diameters (at 10 inches).
- Eyepiece and objective 2 = (broken)
- Eyepiece and objective 1 = 330 diameters (at 10 inches).



The lenses are simple (achromatic doublets dating only from the early nineteenth century) and are diaphragmed extensively.

In fact, the lens of the highest objective is enclosed in a brass capsule which is perforated on either side, the perforations measuring about  $\frac{1}{25}$  of an inch in diameter. With the highest power there is an extraordinary working distance—one eighth of an inch. The maximum magnification, by the way, corresponds roughly with that of a modern Leitz microscope, having a No. 6 objective and No. 1 eyepiece.

The accessories include stage-forceps, a small bull's-eye condenser, a hand lens, forceps, extra concave mirror, a long handle (?), a plano-concave lens, and ten objects mounted dry in sockets in a wheel-like carrier. The objects are still in place and include pollen, flea, wing of fly, spider and insect scales.

BASHFORD DEAN.

### STOMATOLEPAS, A BARNACLE COMMENSAL IN THE THROAT OF THE LOGGERHEAD TURTLE

While investigating the parasites of the loggerhead, *Caretta caretta*, at the Marine Laboratory of the Carnegie Institution at Tortugas, Florida, Professor Edwin Linton found numerous small barnacles partially imbedded in the mucous membrane of the upper end of the gullet. Many sessile barnacles are known to live externally on marine turtles, whales, etc., but up to this time none has been known living internally.<sup>1</sup> One group of Cirripedia, the Rhizocephala, consists wholly of parasitic forms which penetrate their crustacean hosts through the external integument. The barnacle discovered by Professor Linton which we will call *Stomatolepas*, seems to be the first commensal form of the thoracic cirripedes.

*Stomatolepas* has about the size and shape of a split pea, the oral surface being flattened. The calcareous walls form a shallow bowl which is imbedded about half of its depth in the membrane of the gullet or posterior part of the mouth of the host.

#### *Stomatolepas prægustator* n. sp.

The walls form a very broad, shallow cup, nearly circular in contour, and about twice as wide at the opening as at the base. The base is flat, circular, excessively thin, but sufficiently calcified to be rigid and retain its shape when dried. The plates of the wall are composed of two layers, an inner layer, thin, dense and transparent, and an outer covering of several layers of thin-

<sup>1</sup> The stalked barnacle *Dichelaspis* lives in the gill cavities of crabs, but is not truly parasitic or commensal.